D R A F T dated July 9, 1997

SFQ01: Science Data Ingest and Archive Confidence Test

Purpose:
- Functional qualification of the INGEST subsystem.
- To verify that the subsystems can receive and archive science data, metadata, ancillary data as per requirements.

Scope:
- The emphasis is on functional qualification rather than the formal check-off of Level 3 requirements.
- These tests are limited to science data ingest and archive.
- These tests will be conducted on a DAAC-by-DAAC basis.
- The tests will be limited to the data from AM1 instruments (CERES, MODIS, ASTER, MISR and MOPITT).
- To the extent possible, realistic data will be used.
- Where relevant, DAAC-to-DAAC transfers of L0-L4 products, metadata and ancillary data will be tested.
- The tests will not focus on data transfer speeds, time taken by the software to do the job. In other words, this is not a performance test.

Assumptions:
- EDOS is fully operational and is connected to the DAAC via the EBnet. (If EDOS is not available, ETS will be the alternative source of L0 products).
- The interface tests ICT3 have verified the EDOS interfaces to concerned DAACs.
- The interface tests ICT4 have verified the NOAA ADC interfaces to concerned DAACs.
- The interface tests ICT1 have verified the SCF interfaces to concerned DAACs.
- The interface tests ICT5 have verified the ECS interfaces to concerned DAS.
- L0 data from the AM1 instruments is available (in the case of ASTER, it will be L1 data on D3 tape).

Overview of the functional threads:

The tests are organized on the basis of the nature of the data and/or the source of the data. The threads, with associated requirements(F&PRS) are,

- Ingest and archival of Production Data Sets (L0) and Expedited Data Sets from EDOS.
- Ingest of ancillary data from FDF (GSFC, LaRC, EDC). (If EDC and LaRC do not have a direct interface with FDF, this thread will apply only to GSFC).
- Ingest and archival of ancillary data from NOAA at the GSFC DAAC.
- Ingest and archive L0-L4 data from other DAACs (EDC and NSIDC DAACs receiving MODIS L1 data from GSFC DAAC).
- Ingest and archive metadata from other DAACs (EDC and NSIDC DAACs receiving MODIS L1 metadata from GSFC DAAC).
- Ingest and archive ancillary data from other DAACs DAACs (EDC and NSIDC DAACs receiving MODIS related data from GSFC DAAC).
- Ingest metadata after doing quality checks. (Req # DADS 290, DADS 300, DADS 310, DADS 320).
- Notification of ingest of data requested in standing orders (other than L0 products).

Functional Thread Test Case: Level 0 data ingest

Description: Ingest and archival of Production Data Sets (L0) and Expedited Data Sets from EDOS.

Objective: To verify that EDS/PDS files from EDOS are stored in the archive.

Success Criteria: The data sets in the archive should have the same filenames, file sizes described in the
                   product delivery record.

Configuration: EDOS (relevant hardware and software), DAAC (relevant hardware and software), test
                   support personnel at both ends. This test will be conducted at each DAAC separately.

Data sets Used: EDS/PDS (MODIS< MOPITT, CERES, MISR, L7(?), and ancillary data.

Test Steps:
    1. Check connectivity and readiness at DAAC and EDOS.
    2. Ensure that the ingest software is active.
    3. Initiate transfer of a few Production Data Sets at the EDOS end.
    4. Monitor the ingest history log and verify names and sizes of files ingested after the arrival of the
        PDR.
    5. Verify that an acknowledgment message was sent by DAAC to EDOS.

Functional Thread Test Case: Orbit and attitude data ingest

Description: Ingest and archival of ancillary data sets (orbit and attitude) (L0) from FDF.

Objective: To verify that ancillary data (orbit and attitude) files from FDF are stored in the archive.

Success Criteria: The data sets in the archive should have the same filenames, file sizes described in the
                   product delivery record.

Configuration: FDF (relevant hardware and software), DAAC (relevant hardware and software), test
                   support personnel at both ends. This test will be conducted at each DAAC separately.

Data sets Used: MODIS orbit and attitude data (simulated?)

Test Steps:
    1. Check connectivity and readiness at DAAC and FDF.
    2. Ensure that the ingest software is active.
    3. Initiate transfer of a few Production Data Sets at the FDF end.
    4. Monitor the ingest history log and verify names and sizes of files ingested after the arrival of the
        PDR.
    5. Verify that an acknowledgment message was sent by DAAC to FDF.

Functional Thread Test Case: NOAA Ancillary data ingest at GSFC DAAC

Description: Ingest and archival of ancillary data from NOAA at the GSFC DAAC.

Objective: To verify that the ancillary data files from NOAA ADC are stored in the archive.

Success Criteria: The data sets in the archive should have the same filenames, file sizes described in the product delivery record.

Configuration: NOAA (relevant hardware and software), DAAC (relevant hardware and software), test support personnel at both ends. This test will be conducted at the GSFC DAAC.

Data sets Used: Ancillary data relevant to CERES product generation.

Test Steps:
1. Check connectivity and readiness at DAAC and NOAA.
2. Ensure that the ingest software is active.
3. Initiate transfer of a few ancillary data at the NOAA end.
4. Monitor the ingest history log and verify names and sizes of files ingested after the arrival of the PDR.
5. Verify that an acknowledgment message was sent by DAAC to NOAA.

Functional Thread Test Case: L0-L4 (from GSFC DAAC) data ingest at EDC DAAC

Description: Ingest and archive L0-L4 data from other DAACs (EDC and NSIDC DAACs receiving MODIS L1 data from GSFC DAAC).

Objective: To verify that the L0-L4 data files from GSFC DAAC are stored in the EDC archive.

Success Criteria: The data sets in the archive should have the same filenames, file sizes described in the product delivery record.

Configuration: GSFC DAAC (relevant hardware and software), EDC DAAC (relevant hardware and software), test support personnel at both ends. This test will be conducted at the EDC DAAC.

Data sets Used: MODIS L1 products generated at the GSFC DAAC.

Test Steps:
1. Check connectivity and readiness at GSFC DAAC and EDC DAAC.
2. Ensure that the ingest software is active.
3. Initiate transfer of a few ancillary data at the GSFC DAAC end.
4. Monitor the ingest history log and verify names and sizes of files ingested after the arrival of the PDR.
5. Verify that an acknowledgment message was sent by DAAC to NOAA.

Functional Thread Test Case: Metadata (from GSFC DAAC) data ingest at EDC DAAC

Description: Ingest and archive metadata data from other DAACs (EDC and NSIDC DAACs receiving MODIS L1 data from GSFC DAAC).

Objective: To verify that the metadata data files from GSFC DAAC are stored in the EDC archive.

Success Criteria: The data sets in the archive should have the same filenames, file sizes described in the product delivery record.

Configuration: GSFC DAAC (relevant hardware and software), EDC DAAC (relevant hardware and software), test support personnel at both ends. This test will be conducted at the EDC DAAC.

Data sets Used: MODIS L1 metadata generated at the GSFC DAAC.

Test Steps:
1. Check connectivity and readiness at GSFC DAAC and EDC DAAC.
2. Ensure that the ingest software is active.
3. Initiate transfer of a few ancillary data at the GSFC DAAC end.
4. Monitor the ingest history log and verify names and sizes of files ingested after the arrival of the PDR.
5. Verify that an acknowledgment message was sent by DAAC to NOAA.

Functional Thread Test Case: Ingest metadata after quality checks

Description: Ingest metadata from other DAACs

Objective: To verify that the quality check function to verify the metadata is working properly.

Success Criteria: The quality check function detects abnormalities in the metadata header information fields.

Configuration: GSFC DAAC (relevant hardware and software), EDC DAAC (relevant hardware and software), test support personnel at both ends. This test will be conducted at the EDC DAAC.

Data sets Used: MODIS L1 metadata generated at the GSFC DAAC.

Test Steps:
1. Check connectivity and readiness at GSFC DAAC and EDC DAAC.
2. Ensure that the ingest software is active.
3. Initiate transfer of a few ancillary data at the GSFC DAAC end.
4. Monitor the ingest history log and verify names and sizes of files ingested after the arrival of the PDR.
5. Verify that an acknowledgment message was sent by DAAC to NOAA.

Functional Thread Test Case: Notification to interested users in response to their standing orders.

Description: Response to standing orders.

Objective: To verify that the users who placed standing orders for some products are notified automatically when these are archived after production.

Success Criteria: The users who placed a standing order subscription get a notification when the products are stored in the archive.

Configuration: GSFC DAAC (relevant hardware and software), test support personnel, subscription service. This test will be conducted at the GSFC DAAC.

Data sets Used: MODIS L0 used to generate L1 at the GSFC DAAC, standing order subscription placed for the L1 data product from a user terminal.

Test Steps: (TBD)

Notes:

1. The Ingest Fault Detection case does not feature in this package because it is basically a system management issue.
2. The requirements (F&PRS) will be mapped to the test threads.
3. The exact nature of the data sets to be used are TBD.